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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,614	08/19/2003	Alan Niedzwiecki	70278.020100	5985

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EXAMINER	
ONEILL, KARIE AMBER	
ART UNIT	**PAPER NUMBER**
1745	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/644,614	NIEDZWIECKI ET AL.	
	Examiner	Art Unit	
	Karie O'Neill	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 11-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 25, 2007, has been entered.

2. Claims 1, 3, 15 and 22 have been amended. Claim 10 has been canceled. Therefore, Claims 1-9 and 11-25 are pending in this office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3, 5-9, 11-15 and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haltiner (US 6,627,339 B2) in view of Frank et al. (US 2002/0114983 A1).

With regard to Claims 1, 15 and 22, Haltiner discloses in Figure 1, a self-contained portable fuel cell electric power generator comprising: an automobile (column 1 lines 21-23), that comprises a body that acts as an enclosure and a chassis which can be considered a trailer onto which the body of the automobile rests, because by

definition a trailer is a wheeled vehicle or platform designed to be pulled; a solid oxide fuel cell stack (10) within the enclosure (column 2 line 4); a hydrogen storage means within the enclosure (column 2 lines 41-43), a hydrogen supply means (40) at least partially within the enclosure, whereby hydrogen is supplied to the fuel cell stack (10); an oxygen supply means (30) at least partially within the enclosure in which a supply of air is provided to an air process section (13) within the main plenum chamber (12), whereby oxygen is supplied to the fuel cell stack (column 2 lines 37-41); and at least one system controller or electrical actuator operable to control hydrogen and oxygen flow to the fuel cell stack (column 2 lines 44-48). The enclosure contains all of the components above and allows the automobile containing the fuel cell system to be self-contained and portable or movable to another location and to supply the electricity generated by the solid oxide fuel cell through combination of a gaseous fuel and an oxidant across an ion conducting electrolyte (column 1 lines 21-33), to an electrical load to power the automobile. Halitiner does not disclose wherein the fuel cell is adapted to supply power of at least 50kW for local use, but it is known in the art that fuel cells can be combined in series and parallel circuits, where series yield higher voltage, and parallel allows a stronger current to be drawn, therefore the fuel cell of Haltiner could be adapted to supply 50kW. Further, the cell surface area can be increased, to allow stronger current from each cell. Haltiner does not disclose wherein a power conditioning means is connected to the fuel cell.

Frank et al. disclose in Figure 2, a power conditioning system (160) including a DC-DC converter, and Ac-DC inverter, battery charge circuitry, load transfer circuitry

and a microprocessor based control system (paragraph 0032). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use a power conditioning system in the fuel cell electric power generator of Haltiner, because Frank et al. teach being able to supply a high-quality AC power output at the output receptacle (paragraph 0032).

With regard to Claim 3, Haltiner discloses a self-contained portable fuel cell electric power generator comprising: an automobile (column 1 lines 21-23), that comprises a body that acts as an enclosure; a solid oxide fuel cell stack (10) within the enclosure (column 2 line 4); a hydrocarbon fuel supply (40) being a direct supply of fuel such as hydrogen, carbon monoxide, methane or hydrocarbon fuels (column 3 lines 19-21 and lines 26-27); a hot box chamber (16) including a reformer system (22) and a fuel cell (88); an oxygen supply means (30) at least partially within the enclosure in which a supply of air is provided to an air process section (13) within the main plenum chamber (12), whereby oxygen is supplied to the fuel cell stack (column 2 lines 37-41); and at least one system controller or electrical actuator operable to control hydrogen flow to the fuel cell stack (column 2 lines 44-48). Halitiner does not disclose wherein the fuel cell is adapted to supply power of at least 50kW for local use, but it is known in the art that fuel cells can be combined in series and parallel circuits, where series yield higher voltage, and parallel allows a stronger current to be drawn, therefore the fuel cell of Haltiner could be adapted to supply 50kW. Further, the cell surface area can be increased, to allow stronger current from each cell. Haltiner does not disclose wherein an electrical power conditioning means is connected to the fuel cell.

Frank et al. disclose in Figure 2, a power conditioning system (160) including a DC-DC converter, and AC-DC inverter, battery charge circuitry, load transfer circuitry and a microprocessor based control system (paragraph 0032). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use a power conditioning system in the fuel cell electric power generator of Haltiner, because Frank et al. teach being able to supply a high-quality AC power output at the output receptacle (paragraph 0032).

With regard to Claims 5 and 17, Haltiner discloses in Figure 1, wherein the oxygen supply means or supply of air (30) comprises at least one air inlet line (31); and at least one main blower (column 3 lines 39-40) connected at one end to the air inlet line (31) and at the other end indirectly to the fuel cell stack (10).

With regard to Claims 6-9 and 18-21, Frank et al. disclose in Figure 2, the power conditioning system (160) including a DC-DC converter, a DC-AC inverter, battery charge circuitry, load transfer circuitry and a microprocessor based control system. The DC-DC converter must interface with both the battery and the fuel cell to convert, by stepping down, the operating DC voltage to the DC voltage required by the DC-AC inverter which transforms the DC power to sinusoidal AC power. The microprocessor based control system controls at least the inverter controller (paragraph 0032). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use a DC-DC converter to step down the voltage of the system and DC-AC inverter with the system Haltiner, because Frank et al. teach providing high-quality AC

power output to the output receptacle and being able to allow the battery to recharge itself when sufficient energy is available (paragraph 0032).

With regard to Claims 11-14, Haltiner discloses an automobile containing a SOFC (column 1 lines 21-23), wherein the portable enclosure, or body of the automobile which encloses the fuel cell electric power generator elements, is mounted and/or removably mounted on a trailer, or chassis of the automobile, because by definition a trailer is a wheeled vehicle or platform designed to be pulled. Haltiner discloses the portable enclosure or body of the automobile further comprising a moving means, the moving means being at least one axel with at least one wheel at each end, affixed to the enclosure. The chassis of the automobile typically has two axels containing at least one wheel at each end, to which the body of the automobile is affixed. The chassis, or moving means, can also be considered a sled because by definition a sled is a small vehicle consisting of a platform mounted on runners for use in traveling.

With regard to Claim 23, Haltiner does not disclose disassociating the enclosure from the trailer before generating the electricity, but it would have been obvious to one or ordinary skill in the art to know that in order to perform any tests on the fuel cell system, the enclosure or body of the automobile should be removed from the trailer or chassis in order to access the fuel cell system easily.

With regard to Claim 24, Frank et al. disclose conditioning the electricity generated from the fuel cell stack before providing connection to the electrical load by after having conditioned the DC power to AC power by sending the electricity through a

DC-DC converter and an AC-DC inverter (paragraph 0032). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to condition the electricity generated from the fuel cell system of Haltiner, because Frank et al. teach providing high-quality AC power output at the output receptacle.

With regard to Claim 25, Haltiner discloses wherein the fuel supplied being a direct supply of fuel such as hydrogen, carbon monoxide, methane or hydrocarbon fuels (column 3 lines 19-21 and lines 26-27), and a hot box chamber (16) including a reformer system (22) and a fuel cell (88). Haltiner also discloses the process air supply section (13) located within the main chamber (12) which provides air to the fuel cell system.

5. Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haltiner, Jr. (US 6,627,339 B2) in view of Frank et al. (US 2002/0114983 A1), as applied to Claims 1, 3, 5-9, 11-15 and 17-25, and in further view of Nishio et al. (US 6,660,417 B1).

Haltiner and Frank et al. disclose the fuel cell generator in paragraph 4 above, but do not disclose wherein the hydrogen storage means comprises at least one compressor means connected to at least one feed line, one or more hydrogen tanks connected to the at least one feed line downstream from the at least one compressor means, at least one control valve connected to the at least one feed line, and he at least one system controller controls at least one of the at least one control valve and the at least one compressor means, whereby the flow of hydrogen is affected.

Nishio et al. disclose in Figures 1 and 2, a hydrogen storage device (5) composed of a hydrogen cylinder (51) which supplies hydrogen to the fuel cell stack through a hydrogen pipe (6) provided with a valve (14) disposed downstream of a conveying pump (52) (column 3 lines 30-34 and column 4 lines 1-4). The fuel cell generator is equipped with a controller, which controls the valves (13 to 15) and the switches (11 and 12) that operate and turn on and off the valves and switches (column 4 lines 30-34). Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use a conveying pump with the hydrogen storage device of the fuel cell system of Haltiner and Frank et al., because Nishio et al. teach the hydrogen storage device storing hydrogen generated by the fuel cell system and the conveying pump aiding in the process of supplying the hydrogen back to the fuel cell in order to generate more electric power (column 1 lines 63-67 and column 2 lines 1-4).

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haltiner, Jr. (US 6,627,339 B2) in view of Frank et al. (US 2002/0114983 A1), as applied to Claims 1, 3, 5-9, 11-15 and 17-25, and in further view of Yoshimura et al. (US 6,722,858).

Haltiner and Frank et al. disclose the fuel cell generator in paragraph 4 above, but do not disclose the compressor means comprising an oil-cooled compressor.

Yoshimura et al. discloses in column 1 lines 8-12, that oil-cooled type compressors are widely known in the art. Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to use the oil cooled compressor of

with the fuel cell generator of Haltiner and Frank et al., because Yoshimura et al. teach detecting the percentage content of oil in discharge gases after the separation of oil from the system for the purpose of saving on power consumption by removing excess oil in the discharge gases with the oil-cooled compressor.

Double Patenting

7. Claims 1-2, 4-9 and 11-24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 and 11-24 of copending Application No. 10/408,055. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application requires a fuel cell generator comprising a fuel cell stack and the copending application requires a solid oxide fuel cell generator comprising a solid oxide fuel cell. A generic fuel cell comprises solid oxide fuel cells and polymer electrolyte membrane fuel cells. Therefore, claims 1-2, 4-9 and 11-24 in the instant application are anticipated by claims 1-9, and 11-23 in the copending '055 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

8. Applicant's arguments filed June 25, 2007, have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) Haltiner and Frank et al. do not disclose wherein the fuel cell can be taken to a location, disassociated from the transportation vehicle and utilized to provide power for use at the location.

In response to Applicant's arguments, please consider the following comments:

(a) Haltiner disclose the fuel cell being housed in an enclosure, the enclosure being the body of the automobile seated on a chassis, and the fuel cell provides power to the automobile. The automobile can also be transported to a location and disassociated from the chassis, in order to make the automobile immobile, but still able to provide power for use at the location.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karie O'Neill whose telephone number is (571) 272-8614. The examiner can normally be reached on Monday through Friday from 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Karie O'Neill
Examiner
Art Unit 1745

MARK RUTHKOSKY
PRIMARY EXAMINER

8/28/07

KAO